

# Tempe Aviation Commission

## IGA Monitoring Report

Month:

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Prepared by:

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# 1. Introduction

This report is prepared by TAVCO to monitor the compliance of operations at Phoenix Sky Harbor Airport with certain noise mitigation flight procedures over the City of Tempe. The Tempe Aviation Commission (TAVCO) consists of Tempe residents selected by the Tempe Mayor and City Council to assist and advise on aviation issues. The City of Tempe is located directly east of the Phoenix Sky Harbor International Airport in Phoenix, which has 3 parallel runways, Runway 8/26, Runway 7L/25R and Runway 7R/25L.

In 1994 the City of Phoenix and the City of Tempe agreed to continue noise mitigation flight procedures already in use over Tempe and to introduce a new procedure for aircraft arriving over Tempe to the new third runway (7R/25L) at Phoenix Sky Harbor International Airport from the east. Tempe had prior to the agreement challenged the plans for the construction of a third runway because of inadequate assessment of the environmental impacts.

## a) The 4-DME procedure

### The 1993 Environmental Impact Statement (EIS)

According to the EIS, which among other planned improvements included the construction of a third runway, departures to the east from the new runway would follow the so-called "One-DME" Standard Instrument Departure procedure (SID) similar to the SID already in use by aircraft departing to the east from the airport<sup>1</sup>.

### The 1994 Record of Decision

The continued use of the "One-DME" procedure was also stated in the Record of Decision (ROD) where the FAA approved the plans for a third runway. When Phoenix and Tempe signed the Intergovernmental Agreement (IGA) on noise mitigation flight procedures over Tempe, the FAA reaffirmed its commitment to uphold these procedures. The "One-DME procedure" became the "4-DME procedure" when a navigational aid (VORTAC) was moved.

### Standard Instrument Departure Procedure (SID)



North Runway 8L (Now 8): "Fly heading 085° to intercept PHX-075, across PXR R-350 at or below 3,000'. At 4 DME east of PHX VORTAC, turn right/left"  
Center Runway 8R (Now 7L): " Fly direct PHX VORTAC, cross PHX R at or below 3,000'. Proceed via PHX R-075 to 4 DME east, turn right/left" (FAA SW-1 of August 10, 2000)

### Measure for Departure Procedure Compliance

Based on the 4-DME Standard Instrument Departure procedure (SID) TAVCO proposed a corridor along the Salt River to measure how commercial jet aircraft and large turboprop aircraft<sup>2</sup> complied with the "4-DME procedure" using the Noise and Flight Track Monitoring System that the airport had agreed to install. This proposal was adopted by the Tempe City Council, but was rejected by the City of Phoenix. The airport use a vertical line to measure compliance of jet departures called the "4-DME Gate" or the "Exit Window Only Gate", which is a 5,500 feet long

<sup>1</sup> Source: Final Environmental Impact Statement Phoenix sky Harbor International Airport Master Plan Update Improvements, November 1993, Section 5.

<sup>2</sup> Aircraft certified and operated according to Title 14 FAR Part 121 or 135 with gross weight exceeding 12,500 pounds.

imaginary line running north south at 4-DME or approximately at Price Road. Turns by carrier jets north or south away from the Salt riverbed before reaching this line, or failures to stay inside the north or south end of this line are registered and in a compiled format submitted to the airlines in a "Notice of Deviation" letter by the airport. Deviations influenced by local weather conditions are excluded from the notification procedure.

This report compare departure compliance using the Tempe Corridor and the Phoenix "4-DME Gate" or "Exit Window Only Gate", and includes large turboprop aircraft because they are part of the 1994 agreement. Since the implementation of the "4-DME Gate" deviation standard for large carriers in 1997 the main issue of concern has been how well these aircraft on departure from Phoenix Sky Harbor International Airport to the east keep to the Salt riverbed and avoid flying over populated areas in Tempe.

### **b) The "Side Step" procedure**

This is a noise mitigating procedure for jets and large turboprop aircraft that approach Phoenix Sky Harbor International

Airport from the east to land on the new south runway, Runway 25L. Aircraft are directed to approach the center runway, Runway 25R, until they are 3 NM from the runway end or abeam Sun Devil Stadium at Mill Avenue in Tempe. At this point the pilot can be requested by Air Traffic Control to change the approach course to land on Runway 25L.

Side-step Procedure



When the pilot directs the aircraft from a stabilized approach to the Runway 25R towards the left and line up for landing on Runway 25L, the pilot performs a "side step procedure". This procedure is designed to keep large aircraft approaches over the river bed as long as possible before they close in towards neighborhoods in downtown Tempe south of the riverbed.

No measure has been set up in the airport Noise and Flight Track Monitoring System to monitor the use of this procedure, and in its present format this report does not include any data on the utilization of the "side step" procedure.

On March 27, 2002 the FAA suspended implementation of a charted "side step" procedure and the practice that had been in place since October 2000 to clear large aircraft to "side step" to Runway 25L because of flight safety concerns. Presently the FAA is clearing large commercial aircraft for straight-in approaches to the runway from the east.

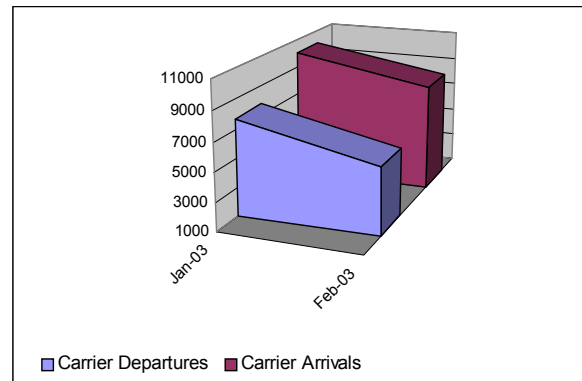
### **c) Departure Split (Equalization)**

This procedure attempts to disperse evenly on an annual basis the noise impact of departing eastbound and westbound aircraft between Tempe and Phoenix during day and nighttime hours.

## 2. Aircraft Operations

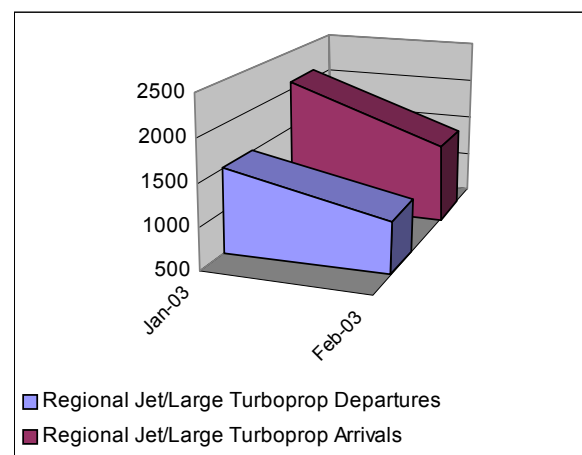
### Carrier Aircraft

Compared to January of 2003 the total number of large carrier jets departing to the east during February 2003 decreased 26.8% and arrivals to the west decreased 16.8%.



### Regional Jets & Large Turboprop Aircraft

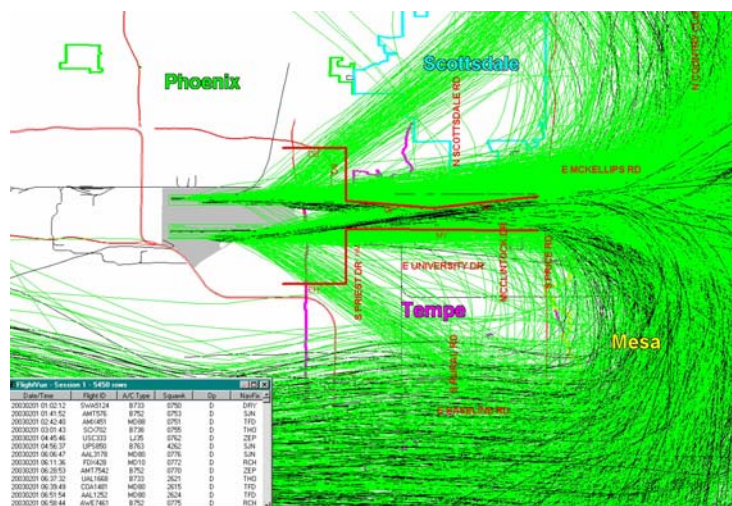
The regional jets and large turboprop departures decreased by 26.1% and arrivals 31.4%



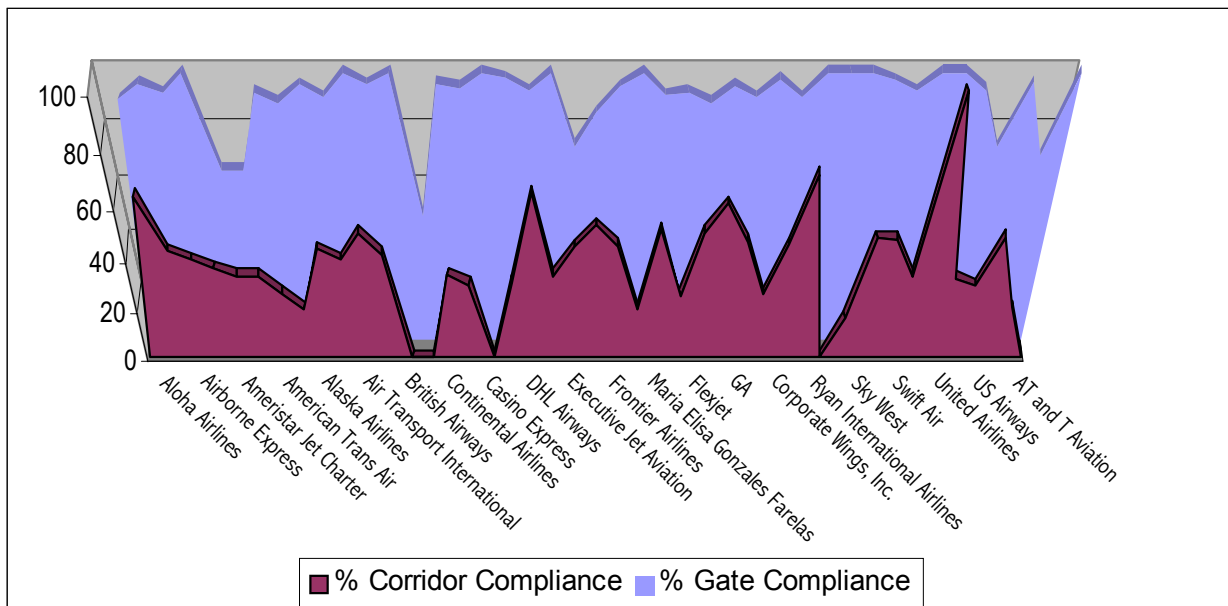
## 3. Departure Compliance

### Compliance

Because of the center runway was closed for operations during February 2002 aircraft operations were directed to the north and south runways. The corridor compliance rate for jets and larger turboprop aircraft was lower than usual. Combined only **42.5%** of these aircraft departing to the east during the month of February 2003 complied with the Tempe corridor. 94.7% of the jets complied with the Phoenix 4 DME gate. Large turboprop aircraft are not included in the Phoenix gate compliance rate.

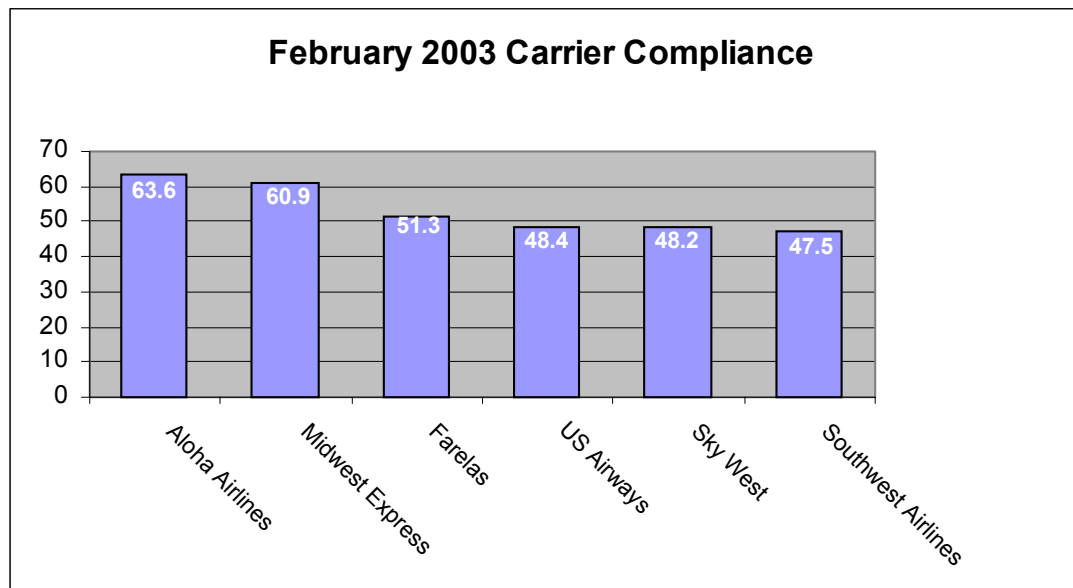


Flight tracks outside the Tempe Corridor are depicted in green.

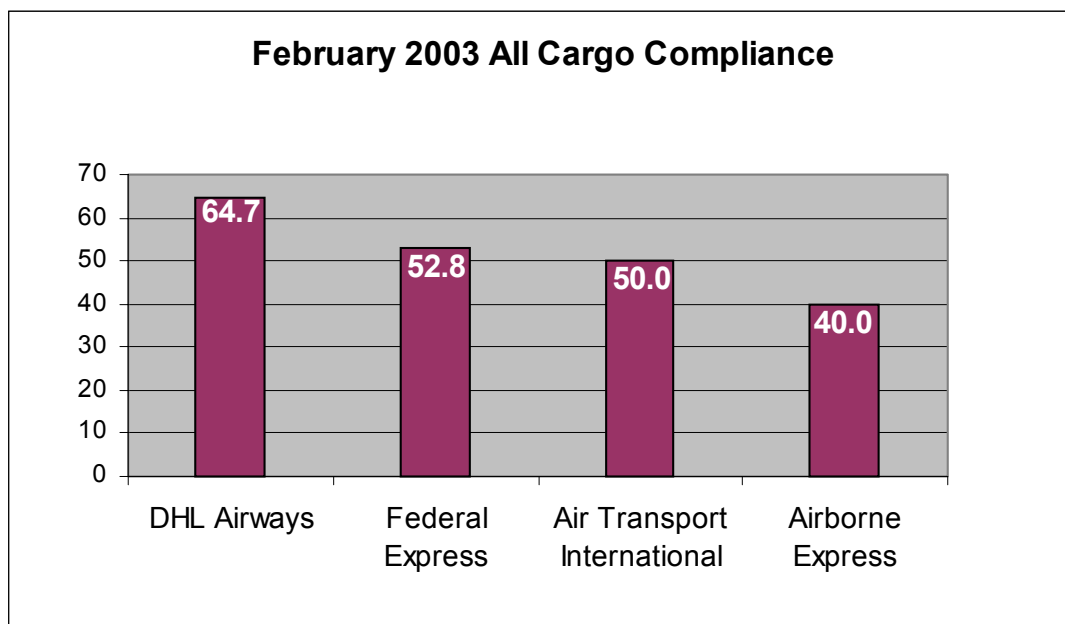


### Top Airlines

The 5 best performing larger carriers had 48 - 63 % of the aircraft in compliance during the month of February 2003. This is an improvement from January 2003 the top 4 larger carriers had 40% - 45% in compliance with the Tempe Corridor.



Compliance rates for all cargo carriers were also better than last month and on level with passenger carriers. In January 2003 the 3 best all cargo airlines had between 42 and 43 % in compliance with the Tempe corridor.



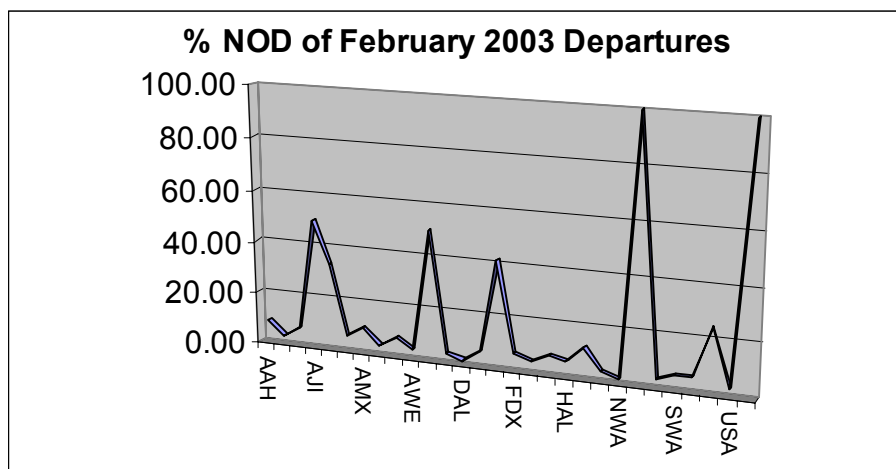
#### Weather

Departures excluded<sup>3</sup>:

2/1 07:08-09:18	2/10 11:27-12:33	2/13 21:03-23:00	2/21 11:25-11:51	2/27 6:14-11:16
2/1 10:19-11:57	2/11 7:06-7:52	2/16 11:05-11:49	2/24 6:11-13:16	2/28 10:58-11:47
2/9 10:19-10:59	2/12 6:55-17:55	2/17 13:06-13:48	2/25 7:13-14:19	

#### Notice of Deviation

The City of Phoenix issues Notice of Deviation (NOD) to airlines, which aircraft have failed to comply with the 4DME Gate. Corporate Wings Inc., US Check Airlines, Ameristar Jet Charter, Executive Jet Aviation, and Capital Air Cargo received the most notices compared to the number of jets they had departing to the east during February 2003. Between 50 - 100% of their departures got a notice from Phoenix.

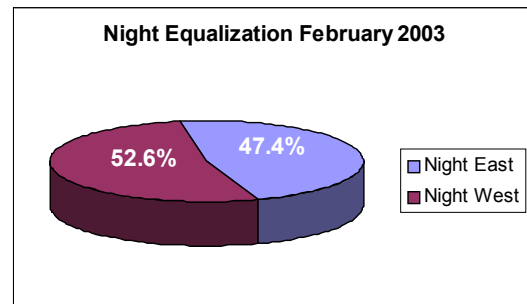
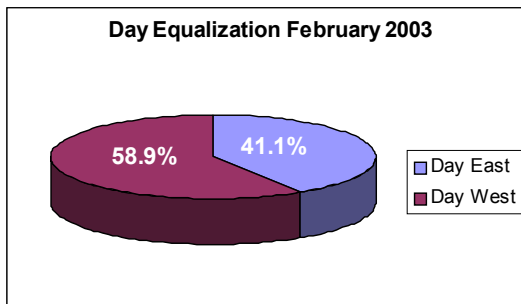


<sup>3</sup> Based on Phoenix evaluations of weather influencing navigation east to 4DME

## 4. East/West Departure Split

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The split in carrier jet and large commuter aircraft departures to the east and west of the Phoenix Sky Harbor International Airport is generally not as favorable for Tempe during the nighttime hours compared to daytime hours. In February 2003 operations were more beneficial than usual. 47.4% east during nighttime and 41% went east during daytime.



Day and nighttime departures are generated by a query covering day + evening hours and nighttime hours. Day = 7: 00 a.m. to 9:59:59 p.m. local time and Night = 9:59:59 p.m. to 7:00 a.m.

## 5. Complaints

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The City of Tempe started registering aircraft noise complaints from Tempe residents in October 2000 after the opening of the third runway at Phoenix Sky Harbor International Airport.

Date	Complaints	Increase	Incursions	Increase	Residents
Jan-03	1165	27	3785	39	11
Feb-03	1203	38	3866	81	13

13 residents filed 38 aircraft noise complaints with the City of Tempe during February 2003. 81 flights were identified as disturbing by being off course or too low.